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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,895	10/09/2003	George Phillips O'Brien	MIC-35 (P50-0116)	9578
34043	7590	06/07/2005	EXAMINER	
DORITY & MANNING, PA & MICHELIN NORTH AMERICA, INC P O BOX 1449 GREENVILLE, SC 29602-1449			JULES, FRANTZ F	
			ART UNIT	PAPER NUMBER
			3617	

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/681,895	Applicant(s) O'BRIEN ET AL	
	Examiner Frantz F. Jules	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyrtos (US 6,072,388) in view of Aduddell (US 5,436,612).

Claims 1-4

Kyrtos discloses an apparatus for monitoring the condition of a driveline comprising at least one sound monitoring device mountable (24) on a vehicle, the sound monitoring device for producing a sound monitoring device output signal (30) representative of the sound produced by at least one tire of the vehicle during rotation of the tire; a signal processing device (30) comprising a neural network for receiving and processing the sound monitoring device output signal, see col 4, lines 31-34, the signal processing device producing a processing device output signal representative of a potential damage condition of the driveline since the tire constitute the main part of the drive line, and an indication device (28) for receiving the processing device output signal and indicating to a user of the vehicle that the driveline is experiencing the potential damage condition.

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The indication device is selected from the group consisting of a lamp, a light emitting diode, a gage, and an audio indicator as disclosed in col 3, lines 1-4 in accordance with claim 2.

The signal processing device produces the processing device output signal upon comparison of harmonics in the sound monitoring device output signal to known harmonics representative of the potential damage condition of the tire as disclosed in col 3 in accordance with claim 3.

The signal processing device produces the processing device output signal upon comparison of an amplitude for each harmonic frequency and a phase angle for each harmonic frequency in the sound monitoring device output signal to known amplitudes for each harmonic frequency and known phase angles for each harmonic frequency representative of the potential damage condition of the driveline as disclosed in col 4, lines 3-27 in accordance with claim 4.

Kyrtsos teach all the limitations of claims 1-4 except for an apparatus for monitoring the condition of a tire. The general concept of using a sound monitoring system to monitor the condition of a tire is well known in the art as illustrated by Aududdell which discloses an audible vehicle monitoring apparatus for monitoring the condition of a tire, see col 5, lines 28-32. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kyrtsos to include the use of his advantageous apparatus for monitoring the condition of a tire as taught by Aududdell in order to detect looseness of recapping material on a recapped tire thereby reduce the risk of tire blowout resulting from wear and increasing safety.

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3. Claims 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyrtos (US 6,072,388) in view of Aududdell (US 5,436,612) and Magiawala et al (US 6,278,361).

Kyrtos teach all the limitations of claims 12-20 except for an apparatus for monitoring the condition of a tire in which the degrees of tread belt separation of the tire is monitored and compared. The general concept of monitoring and comparing the degrees of tread belt separation of a tire is well known in the art as illustrated by Magiawala et al which discloses the teaching of monitoring the degrees of tread wear of a tire and comparing its resonance frequency to at least one stored resonance frequency, see col 2, lines 56-67, col 2, lines 1-22. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kyrtos to include the use of monitoring and comparing the degrees of tread belt separation in his advantageous apparatus for monitoring the condition of a tire as taught by Magiawala et al in order to improve the accuracy of the system thereby improving safety.

4. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyrtos (US 6,072,388) in view of Aududdell (US 5,436,612) and Magiawala et al (US 6,278,361).

Kyrtos teach all the limitations of claims 12-20 except for an apparatus for monitoring the condition of a tire in which the degrees of tread belt separation of the tire is monitored and compared. The general concept of using a sound monitoring system to monitor the condition of a tire is well known in the art as illustrated by Aududdell which discloses an audible vehicle monitoring apparatus for monitoring the condition of a tire,

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see col 5, lines 28-32. Also, the general concept of monitoring and comparing the degrees of tread belt separation of a tire is well known in the art as illustrated by Magiawala et al which discloses the teaching of monitoring the degrees of tread wear of a tire and comparing its resonance frequency to at least one stored resonance frequency, see col 2, lines 56-67, col 2, lines 1-22. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kyrtos to include the use of his advantageous apparatus for monitoring the condition of a tire as taught by Aududdell in order to detect looseness of recapping material on a recapped tire thereby reduce the risk of tire blowout resulting from wear and increasing safety. In addition, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kyrtos to include the use of monitoring and comparing the degrees of tread belt separation in his advantageous apparatus for monitoring the condition of a tire as taught by Magiawala et al in order to improve the accuracy of the system thereby improving safety.

Response to Arguments

5. Applicant's arguments filed 03/08/2005 have been fully considered but they are moot in view of the new grounds of rejection.

1. Applicant's argument regarding the lack of the disclosure a neural network from the Aududdell reference forces the withdrawal of the anticipation rejection. The use of a neural network to process signal from a sound monitoring sensor is well known in the art as disclosed in the Kyrtos reference. Also, the general concept of using a sound

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monitoring device in monitoring the condition of a tire is well known in the art as illustrated by Aduddell which establishes a prima facie case of obviousness.

2. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, an ordinarily skilled artisan would have been motivated to incorporate the teaching of sound monitoring device applied to monitor the condition of a tire to the Kyrtos reference in order to achieve among others the benefit of increasing safety in the vehicle.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure;

Stephens et al and Giustino are cited to show related method of monitoring the condition of a tire using a neural network.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frantz F. Jules whose telephone number is (703) 308-8780. The examiner can normally be reached on Monday-Thursday and every other Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph S. Morano can be reached on (703) 308-0230. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frantz F. Jules
Primary Examiner
Art Unit 3617

FFJ

May 25, 2005

FRANTZ F. JULES
PRIMARY EXAMINER

